

MIDSTATE AMATEUR RADIO CLUB
MARC
"Ham Radio News from Johnson County, Indiana"

1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965	1964	1963	1962	1961	1960	1959	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1939	1938	1937	1936	1935	1934	1933	1932	1931	1930	1929	1928	1927	1926	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911	1910	1909	1908	1907	1906	1905	1904	1903	1902	1901	1900	1899	1898	1897	1896	1895	1894	1893	1892	1891	1890	1889	1888	1887	1886	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876	1875	1874	1873	1872	1871	1870	1869	1868	1867	1866	1865	1864	1863	1862	1861	1860	1859	1858	1857	1856	1855	1854	1853	1852	1851	1850	1849	1848	1847	1846	1845	1844	1843	1842	1841	1840	1839	1838	1837	1836	1835	1834	1833	1832	1831	1830	1829	1828	1827	1826	1825	1824	1823	1822	1821	1820	1819	1818	1817	1816	1815	1814	1813	1812	1811	1810	1809	1808	1807	1806	1805	1804	1803	1802	1801	1800	1799	1798	1797	1796	1795	1794	1793	1792	1791	1790	1789	1788	1787	1786	1785	1784	1783	1782	1781	1780	1779	1778	1777	1776	1775	1774	1773	1772	1771	1770	1769	1768	1767	1766	1765	1764	1763	1762	1761	1760	1759	1758	1757	1756	1755	1754	1753	1752	1751	1750	1749	1748	1747	1746	1745	1744	1743	1742	1741	1740	1739	1738	1737	1736	1735	1734	1733	1732	1731	1730	1729	1728	1727	1726	1725	1724	1723	1722	1721	1720	1719	1718	1717	1716	1715	1714	1713	1712	1711	1710	1709	1708	1707	1706	1705	1704	1703	1702	1701	1700	1699	1698	1697	1696	1695	1694	1693	1692	1691	1690	1689	1688	1687	1686	1685	1684	1683	1682	1681	1680	1679	1678	1677	1676	1675	1674	1673	1672	1671	1670	1669	1668	1667	1666	1665	1664	1663	1662	1661	1660	1659	1658	1657	1656	1655	1654	1653	1652	1651	1650	1649	1648	1647	1646	1645	1644	1643	1642	1641	1640	1639	1638	1637	1636	1635	1634	1633	1632	1631	1630	1629	1628	1627	1626	1625	1624	1623	1622	1621	1620	1619	1618	1617	1616	1615	1614	1613	1612	1611	1610	1609	1608	1607	1606	1605	1604	1603	1602	1601	1600	1599	1598	1597	1596	1595	1594	1593	1592	1591	1590	1589	1588	1587	1586	1585	1584	1583	1582	1581	1580	1579	1578	1577	1576	1575	1574	1573	1572	1571	1570	1569	1568	1567	1566	1565	1564	1563	1562	1561	1560	1559	1558	1557	1556	1555	1554	1553	1552	1551	1550	1549	1548	1547	1546	1545	1544	1543	1542	1541	1540	1539	1538	1537	1536	1535	1534	1533	1532	1531	1530	1529	1528	1527	1526	1525	1524	1523	1522	1521	1520	1519	1518	1517	1516	1515	1514	1513	1512	1511	1510	1509	1508	1507	1506	1505	1504	1503	1502	1501	1500	1499	1498	1497	1496	1495	1494	1493	1492	1491	1490	1489	1488	1487	1486	1485	1484	1483	1482	1481	1480	1479	1478	1477	1476	1475	1474	1473	1472	1471	1470	1469	1468	1467	1466	1465	1464	1463	1462	1461	1460	1459	1458	1457	1456	1455	1454	1453	1452	1451	1450	1449	1448	1447	1446	1445	1444	1443	1442	1441	1440	1439	1438	1437	1436	1435	1434	1433	1432	1431	1430	1429	1428	1427	1426	1425	1424	1423	1422	1421	1420	1419	1418	1417	1416	1415	1414	1413	1412	1411	1410	1409	1408	1407	1406	1405	1404	1403	1402	1401	1400	1399	1398	1397	1396	1395	1394	1393	1392	1391	1390	1389	1388	1387	1386	1385	1384	1383	1382	1381	1380	1379	1378	1377	1376	1375	1374	1373	1372	1371	1370	1369	1368	1367	1366	1365	1364	1363	1362	1361	1360	1359	1358	1357	1356	1355	1354	1353	1352	1351	1350	1349	1348	1347	1346	1345	1344	1343	1342	1341	1340	1339	1338	1337	1336	1335	1334	1333	1332	1331	1330	1329	1328	1327	1326	1325	1324	1323	1322	1321	1320	1319	1318	1317	1316	1315	1314	1313	1312	1311	1310	1309	1308	1307	1306	1305	1304	1303	1302	1301	1300	1299	1298	1297	1296	1295	1294	1293	1292	1291	1290	1289	1288	1287	1286	1285	1284	1283	1282	1281	1280	1279	1278	1277	1276	1275	1274	1273	1272	1271	1270	1269	1268	1267	1266	1265	1264	1263	1262	1261	1260	1259	1258	1257	1256	1255	1254	1253	1252	1251	1250	1249	1248	1247	1246	1245	1244	1243	1242	1241	1240	1239	1238	1237	1236	1235	1234	1233	1232	1231	1230	1229	1228	1227	1226	1225	1224	1223	1222	1221	1220	1219	1218	1217	1216	1215	1214	1213	1212	1211	1210	1209	1208	1207	1206	1205	1204	1203	1202	1201	1200	1199	1198	1197	1196	1195	1194	1193	1192	1191	1190	1189	1188	1187	1186	1185	1184	1183	1182	1181	1180	1179	1178	1177	1176	1175	1174	1173	1172	1171	1170	1169	1168	1167	1166	1165	1164	1163	1162	1161	1160	1159	1158	1157	1156	1155	1154	1153	1152	1151	1150	1149	1148	1147	1146	1145	1144	1143	1142	1141	1140	1139	1138	1137	1136	1135	1134	1133	1132	1131	1130	1129	1128	1127	1126	1125	1124	1123	1122	1121	1120	1119	1118	1117	1116	1115	1114	1113	1112	1111	1110	1109	1108	1107	1106	1105	1104	1103	1102	1101	1100	1099	1098	1097	1096	1095	1094	1093	1092	1091	1090	1089	1088	1087	1086	1085	1084	1083	1082	1081	1080	1079	1078	1077	1076	1075	1074	1073	1072	1071	1070	1069	1068	1067	1066	1065	1064	1063	1062	1061	1060	1059	1058	1057	1056	1055	1054	1053	1052	1051	1050	1049	1048	1047	1046	1045	1044	1043	1042	1041	1040	1039	1038	1037	1036	1035	1034	1033	1032	1031	1030	1029	1028	1027	1026	1025	1024	1023	1022	1021	1020	1019	1018	1017	1016	1015	1014	1013	1012	1011	1010	1009	1008	1007	1006	1005	1004	1003	1002	1001	1000	999	998	99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SPARK GAP

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Membership Information

The Mid-State Amateur Radio Club is a Franklin based organization open to all amateur radio operators in central Indiana.

The MARC meets the third Saturday of each month in the training room of the Johnson County Emergency Operations Center at 1100 Hospital Road in Franklin, In.

The MARC operates a 2-meter repeater at 146.835 MHz. Each club member has free access to the repeater and autopatch.

Annual dues are \$18.00. VE Testing follows each meeting from March through November.

Submit stories to the editor on disk or via e-mail by the 3rd of each month.

Send change-of-address information and membership applications to the club treasurer @ MARC President, P.O. Box 836, Franklin, In. 46131.

The Spark Gap is published monthly by the Mid-State ARC.

MARC



CLUB OFFICERS

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H. 535-5867

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H. 882-5081

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H. 887-9504

Activities:

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H. 881-0817

VE Team Coordinator

Dave Wendt, KA9OOH

H. 974-1488

Club Meeting

Saturday February 15th

8 a.m.

Guest speaker, Ed Woods, WD9DVA

Topic: MARS and Beyond

No VE Testing



By Mike Rosemark, KA9VMR

NWS Meteorologist

How To Tilt A Thunderstorm

Another severe weather season is just around the corner for Indiana. Although this area can experience severe thunderstorms and tornadoes in every month of the year, probabilities for this type of weather start to go up dramatically in March, peaking out in April, May, and June. Severe thunderstorms are capable of producing large hail, strong surface winds, flash floods, and tornadoes. Like their non-severe cousin, they form as moist air is forced to rise into an unstable environment. Often present in the atmosphere when severe thunderstorm potential is high is vertical wind shear.

Vertical wind shear means that the speed and direction of the wind changes as you go up through the atmosphere. In an area of favorable vertical wind shear, instability will be increased and more importantly, the thunderstorm updraft will tilt. This is important because, as is the case of the common non-severe thunderstorm, when precipitation become too heavy to be supported by the updraft, it falls down through the updraft weakening it. When vertical wind shear causes the updraft to tilt, it can become separated from the downdraft of a storm.

If this happens, downdrafts caused by falling precipitation do not interfere with the updraft. Therefore, the updraft remains strong and does not dissipate as long as sufficient moisture and instability are present. Because the updrafts can flow unabated in a tilted storm, they can reach speeds in excess of 50 knots. These speeds are necessary for large severe



thunderstorms which often exceed 50,000 feet in altitude. The strong updrafts will allow hailstones to remain aloft until they reach large size. Because of this, hail size is a good way of indirectly measuring the relative intensity of the thunderstorm updraft.

In the downdraft region of the severe thunderstorm, air which is cooled by evaporation of some of the precipitation and by sucking in cooler air surrounding the storm will accelerate in speed as it moves down toward the surface. When storms grow to great height, these downdrafts have sufficient distance to accelerate

to speeds that can cause damage when striking the ground. There is no mixing of the updraft to slow these winds as is the case with thunderstorms in a non-favorably sheared environment. Upon hitting the ground, downdrafts spread out and move in all directions. The boundary between the warm air at



the surface and the colder air brought down by the thunderstorm downdraft is called the gust front. As the name implies, it's passage is often marked by a gust of wind. Lower cloud bases called shelf clouds frequently form in the vicinity of the gust front when wind speeds are strong.

Occasionally roll clouds, which appear to rotate along a horizontal axis, appear near the gust front. Neither of these cloud features should be confused with a wall cloud which would be located in the updraft portion of the thunderstorm. Severe thunderstorms can produce small areas of very high speed winds within the downdraft. These areas, known as microbursts, can contain winds in excess of 100 mph. Considerable damage is possible from these events.

Old wisdom revisited

Give a man a fish,

and he may eat it at his lunch break.

Teach a man to fish,

and he may not go to work at all.

---anonymous

Remember When?

From Midstate ARC News

October 1986

Dave KA9OOH, Editor

-Welcome to the new look for the Midstate ARC News. As new editor, I intend to put out a lively and interesting rag (but no promises).

-I'm sorry there wasn't time to get this mailed before the October meeting, but we forgot about there being no mail delivery on Columbus Day.

-The logo at the top was done on a Radio Shack Color computer, using a program called CocoMax II (no relation to Max Headroom!)

-THANKS to the House of Franklin for installing a door in the back dining room. It makes it easier to hear (during the meeting).

-New Officers for 86-87 Joan Kemp, N9DON President, Jack Parker, N9EXK, Vice President, Tom Carroll, N9AZD Secretary-Treasurer and Larry Kemp, N9DLN, Repeater Trustee.

-N9AZD reports that he has a good supply of 610's on hand for the coming upgrades. (I may need some of those for the Red Cross Novice class, Tom!)

-NEW MEMBERS--KA9CQC Dave Snyder (August), KB9K Bill Fisher (Sept) and KA9VRB Fred Creekmore in July. This brings total membership to 44.

(Excerpts from October 1986 club newsletter, Dave Wendt editor)

HAPPY Birthday

David Wendt	KA9OOH	2/3
Joan Kemp	N9DON	2/11
Bob DeSpain	N9DE	2/13
Fred Bennett	N9TA	2/18
Homer Keesling	WB9OZZ	2/19
James Dezarn	KB9NSX	2/19
Ralph Talbott	N9RNI	2/19
Bob LaGrange	N9SIU	2/21
Christopher Vail	N9TFC	2/27

Norm Beaty, WD9BGM, SK

The Amateur Radio and broadcasting communities in Indiana, lost a good friend last month. Norm Beaty, known to his ham radio friends as WD9BGM, died from medical complications resulting from serious injuries suffered in an automobile accident last October.

The accident occurred on Interstate 70 near his home in Greenfield, Indiana. Norm was the Chief engineer for WIBC-AM radio. He was known around the state for his efforts as Broadcast Frequency Coordinator for the Indiana Society of Broadcast Engineers.

Norm helped to develop and implement the new Emergency Notification System used at radio and TV stations around the state. Norm is survived by his wife Margo and two daughters, Amber and Crystal. On January 22, 1997, at the age of 45, Ralph Norman Beaty, WD9BGM, became a Silent Key.

DUES Notice

Have you paid your 1997 Dues yet? Just a friendly reminder that the annual dues are payable at the February 15th meeting or via snail mail to: **MARC Treasurer P.O. Box 836, Franklin, In. 46131.** If you have not paid your Dues by the end of February 1997, this will be the last issue of Spark Gap you will receive. An \$18.00 activation and processing fee will be charged to any old or new members establishing membership following the February deadline. (sounds like a utility company, doesn't it?) Actually, your total cost is **still only \$18.00.** We appreciate your support and look forward to another exciting year of Amateur Radio activities in MARC.



Ah say,
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Class

NOVICE/TECH CLASSES

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New ham freq's

The FCC has amended Part 15 of its rules to make available 300 MHz of spectrum in the 5-GHz range—including part of secondary Amateur Radio allocations in that region—for use by Unlicensed National Information Infrastructure (U-NII) devices (formerly referred to as NII/SUPERNet devices). The FCC made available 5.15 to 5.35 GHz and 5.725 to 5.825 GHz. Part 15 requires that unlicensed operations not interfere with other services. The U-NII devices will provide short-range, high-speed wireless digital communications on an unlicensed basis. The 5.650 to 5.925-GHz band is allocated on a secondary basis to the amateur service; additionally, the 5.65 to 5.67-GHz and 5.83 to 5.85-GHz subbands are allocated to the amateur-satellite service on a secondary basis. The original FCC U-NII proposal included 5.725 to 5.875 GHz, but the plan adopted this month excludes 50 MHz of this, including the Amateur Radio-satellite

downlink at 5.83 to 5.85 GHz. The FCC said it anticipates that U-NII devices will support the creation of new wireless local area networks (LANs) and provide wireless access to the National Information Infrastructure (NII). That's the name the FCC has given the "group of networks, including the public switched telecommunications network, radio and television networks, private communications networks, and other networks not yet built" to serve US communication needs.

The FCC said it was "adopting the minimum technical rules necessary to prevent interference to other services and to ensure that the spectrum is used efficiently" in order to permit "significant flexibility in the design and operation of these devices." Although it initially proposed a listen-before-talk protocol, the FCC deleted this requirement in its final Report and Order, concluding that requiring such "spectrum etiquette" could delay deployment of U-NII devices and hinder innovation. The Commission also declined to adopt a channelization plan or a minimum modulation efficiency requirement. Incumbent users of the 5.725 to 5.825-GHz band either opposed allowing U-NII operation because of interference concerns or urged that sharing studies be completed before that band was made available to U-NII devices.

In its comments on the plan, the ARRL argued against setting up an unlicensed service. The League asserted that longer-range community networks are not consistent with the typical low-power operations authorized by Part 15. Although the ARRL opposed the operation of U-NII devices in the 5.725 to 5.825-GHz band, it stated that if a 100-mW EIRP limit and a power spectral density (PSD) limitation of 0.03 mW in any 3-kHz bandwidth were adopted, then U-NII devices should be able to share this band with incumbent operations.

The Commission decided to increase the maximum peak power limit to 50 mW peak transmitter output power with up to 6 dBi antenna gain (which equates to 200 mW EIRP) in the 5.15 to 5.25-GHz band; 250 mW peak transmitter output power with up to 6 dBi antenna gain (which equates to 1 W EIRP) in the 5.25 to 5.35-GHz band; and 1 W peak transmitter output power with up to 6 dBi antenna gain (which equates to 4 W EIRP) permitted in the 5.725 to 5.825-GHz band. Further, the FCC adopted a PSD requirement for U-NII devices that would require that the maximum power be spread across a bandwidth of at least 20 MHz.

The FCC said it believes that the new rules "will foster the development of a broad range of new devices and service offerings that will stimulate economic development and the growth of new industries." —FCC— ARRL Bulletin

Man from MARS

Advanced technology and fewer military bases around the world are taking their toll on the MARS program. According to Ed Woods, WD9DVA, the Military Amateur Radio Service (MARS) has seen a dramatic drop in the number of messages handled since the government began closing military installations around the world.

Ed Woods was first licensed in 1950 while serving in the Air Force. He has been active in the MARS program for the past fifteen years. Ed says MARS members normally are kept busy passing radio traffic and making phone patches for active military personnel around the world. But, he says, new satellite and cell phone technology has taken much of the personal message traffic out of the hands of Amateur Radio operators. As a result, some of the special HF frequencies used by MARS operators have been auctioned off to commercial interests. Ed will talk about the future of MARS and the growing threat of losing valuable Amateur Radio frequencies at the February 15th meeting.



Touching the past. Club members inspect some of the antique amateur radios displayed by Roger Lowary, W9BZ. Roger collects and restores classic amateur and AM radios. Pictured (L-R), Bob LeGrange, N9SIU; Bill Brinkmann, KB9ZMU; and Dennis Parton, KB9HPQ. Photo by NT9J.

Public Service



Members of the Monroe County (Michigan) ARES were activated late on the afternoon of January 9 in response to the crash of a Comair commuter aircraft near Ida, Michigan. The flight (Flight 3272) was en route to Detroit from Cincinnati, Ohio, and carried 26 passengers and a crew of three. All aboard lost their lives. A communication center was activated at the Monroe County Chapter of the American Red Cross, and Amateur Radio units were initially dispatched to the crash scene and the field command post at the Raisinville Township Hall. Communication was provided to the Red Cross, which assisted Emergency Management and Human Services Personnel. In all, 26 amateurs were involved with the emergency operation as local officials and National Transportation Safety Board conducted their investigation. Blowing snow and 30-degrees-below-zero wind chills hampered efforts at the crash scene, which occurred on farmland about 150 yards from the town hall. The Monroe County EC is Mike "armol, N8KUF. --Dale Williams, WA8EFK

Navy studies SAREX QSO's

Ham-Astronaut Jerry Linenger, KC5HBR, has become the fourth American to occupy a position on the Russian Space Station Mir, following the docking of Atlantis to the Russian space station late Tuesday. Linenger officially traded places with fellow ham-Astronaut John Blaha, KC5TQZ, when their form-fitted Soyuz seat liners were swapped in the small spacecraft that is used for return to Earth. "We're truly in the space station business," said Blaha, who completed 118 days as a Mir crew member. Linenger will stay aboard Mir until May.

During his stay aboard Mir, permission was obtained from the FCC to permit Blaha to engage in third-party communication with unlicensed individuals on Earth. This led to a series of MIREX contacts with several schools. The last contact, on Saturday, January 11, was with pupils at Emerson Elementary School in Snohomish, Washington. The school's technical curriculum specialist Gary Evans e-mailed an enthusiastic note of gratitude to AMSAT's Vice President for Manned Space Programs Frank Bauer, KA3HDO. "It was tremendous! I wish you could have seen for yourself the faces of both the students and their parents as our contact with Mir evolved." The Naval Oceanographic Office assisted with the QSO. They are now interested in doing a program similar to SAREX. The Navy wants to use Amateur Radio to allow students to talk to Naval Oceanographic Office employees who are out on exciting expeditions. --NASA/SAREX Working Group --ARRL Bulletin

Food for thought

- An Easterner who walked into a western saloon was amazed to see a dog playing poker with three men. "Can that dog really read cards?" the Easterner asked. "Yeah, but he ain't much of a player, said one of the men. "Whenever he gets a good hand, he wags his tail."
- Most expressways have three lanes: the left lane, the right lane, and the one you're trapped in when you see your exit.
- Every parent believes in heredity until the children start acting goofy.

from the April '94 Westchester Emergency Communications Assn. (North Tarrytown, N.Y.) "Wecagram", Paul-WB2VUK, Editor ARNS

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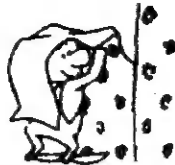
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